

RTC

C64-LINK

by David Foster



The Smart 64

manual written / edited by

Gerald L. Gold

Richvale Telecommunications

10610 BAYVIEW (Bayview Plaza)

RICHMOND HILL, ONTARIO L4C 3N8

Canada

(416) 884-4165

501128

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Table of Contents

Chapter	Page
I. Cartridges, Cables and Connectors: Getting Everything in the Right Place7
1. Installing C64-LINK . . . . .	.9
2. Connecting a Printer and Disk Drive . . .	.11
Connections and Required Cables . . . .	.14
II Getting the most of C64-LINK. . . . .	.15
1. This Guide and Programming Manuals . .	.17
2. C64-LINK and 64K RAM . . . . .	.19
3. Relocating C64-LINK -Run more Programs . . . . .	.19
4. BASIC 4.0 and C64-LINK . . . . .	.20
5. I/O Commands . . . . .	.22
III Basic 4.0 Commands . . . . .	.23
IV The C64-LINK Monitor . . . . .	.31
V Modem . . . . .	.35
VI C64-CHAIN . . . . .	.39
VII Memory Usage . . . . .	.43

PREFACE

With C64-LINK in the back of your 64, your computer acquires the capabilities of the best of the micro-computers at a fraction of their cost. C64-LINK does this by adding an IEEE ROM, a communication device which makes the 64 compatible with virtually all Commodore equipment. This way the 64 operates a wide range of printers and any Commodore disk drive. Even the mass storage 8050 and 8250 disk drives, or a hard disk can be used with a 64 equipped with C64-LINK. With an additional cable, you can use the 64 to communicate through a modem (a telephone communicator) and 'converse' with other computers or with information banks such as The Source, Compuserve and the free electronic "bulletin boards" that now operate in most North American cities.

There's more than the ability to print and expand storage. C64-LINK extends the commands that are available in the 64 memory. With the additional power of BASIC 4.0, you will find the 64 to be even more versatile. Commodore PET programs will run with few modifications and the 64 can be used in a wider range of games, aids to home and business finances, educational applications and word processing.

Connect your 64 to another 64 (equipped with C64-LINK), or to several other 64's and every computer in the C64-

-CHAIN will be able to access a common disk drive or a common IEEE interfaced printer. This feature alone is worth hundreds of dollars if you purchase a separate networking device.

There's more to come. C64-LINK includes a machine language monitor that is constantly available either for the relocating and adjustment of programs or for the development of user-designed software for the 64.

The C64-LINK has been tested with the pre-release version of the CP/M card with great results! By relocating the C64-LINK to \$C000 (see Section 2.3), you will be able to use IEEE devices from CP/M with only minor problems (accessing only one drive). When the final release of the CP/M disk becomes available, RTC will provide an IEEE CP/M disk to allow full implementation of IEEE with CP/M. This disk will be available through all C64-LINK dealers or Richvale Telecommunications.

While we are on the subject of software, Richvale Telecommunications has released Script 64, a full-featured professional word processor. Use the Script 64 with C64-LINK and you can also use virtually any popular letter quality or dot matrix printer.

We are proud of the quality and features that the C64-LINK 64 provides. Please send us your suggestions and comments.

Peter Smith
Richvale Telecommunications

Chapter I

CARTRIDGES, CABLES AND CONNECTORS

GETTING EVERYTHING IN THE RIGHT PLACE

1. Installing your C64-LINK

it takes only a few minutes to install a cartridge that will greatly expand your use of the 64:

- a. Turn off your 64 using the power switch.
- b. Insert the C64-LINK cartridge into the expansion port as shown in FIGURE 1. Line the cartridge up with the 64 so that the label is facing you. The opening in the cartridge should be facing the 64.
- c. Slip the cartridge into the socket in the expansion port. Do not force it into the socket. Three-quarters of the cartridge will protrude from the back of the 64 when C64-LINK 64 is snugly in place.

WARNING

Be sure that all your computer equipment is plugged into a common power outlet such as a power bar. Otherwise, a ground differential may cause damaged to your C64-LINK or other computer equipment.

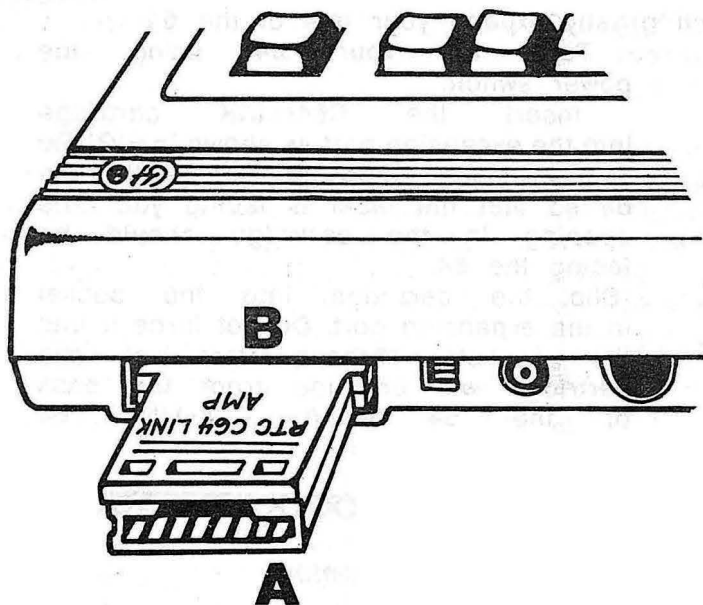


FIGURE 1 Installing the C64-LINK
in the 64 Expansion port

Legend A - C64-LINK cartridge
B - expansion port

2. Connecting a Printer and a Disk Drive

With C64-LINK you can easily connect a printer, disk drive, or modem to your 64. As you build your system you might choose to use a Commodore tape recorder with the printer of your choice and then add a disk drive.

Adding a printer, a drive or a modem to the 64 that is equipped with C64-LINK is not at all complicated. You will have to purchase the cable that is best suited to the equipment you are adding to the 64. There are three combinations that will work well with C64-LINK.

1. C64-LINK 64 and a PET to IEEE cable: As we explain in greater detail later in this guide, most Commodore printers and disk drives use an IEEE connection to communicate with the computer. The exceptions are the 1541 Drive and the VIC Graphic Printer which connect directly to the 64 using a serial connection. C64-LINK gets around this limitation by allowing you to connect as many IEEE devices as you require. All that you have to do is to connect the wide end of a PET to IEEE cable to the back of the C64-LINK cartridge (Commodore logo on the wide end of the cable faces upward). Then connect the narrow end of the cable (the IEEE connector) to an IEEE device such as a disk drive or a printer. Once an IEEE device such as a Commodore printer

is connected to the 64, you can connect that device to other IEEE devices by using an IEEE to IEEE cable. For example, if you connect your disk drive to a Commodore printer and then connect the printer to the back of the C64-LINK cartridge, the 64 will control both the printer and the disk drive (see FIGURE 2).

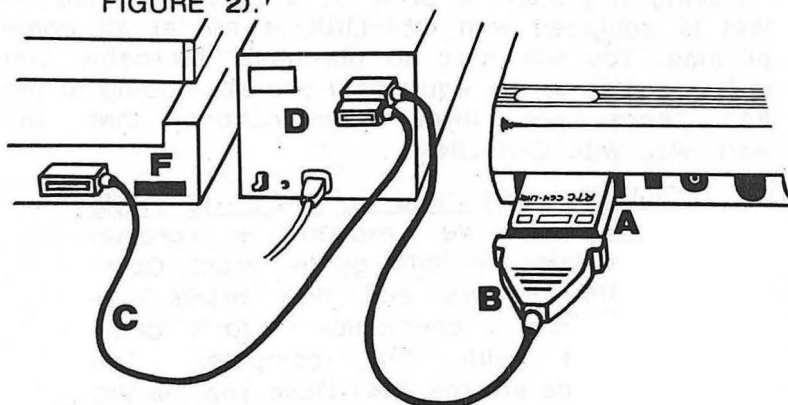


FIGURE 2 Connecting Several IEEE devices to the 64

- Legend:
- A C64-LINK
 - B PET to IEEE cable
 - C IEEE to IEEE cable
 - D Drive
 - F PRINTER

2. VL-3 Adapter with a Parallel Printer: This is a useful cable when you require a direct connection to a parallel printer such as an EPSON, a NEC, a CENTRONICS or a C.I.TOH. This adapter permits the simultaneous connection of both an IEEE device, such as a Commodore 4040 drive, and a parallel device, such as an Epson printer. Connect the printer to the VL-3 cable and then connect the other end of the cable to the 64 user's port (B in Figure 3). Using a PET to IEEE cable, connect the disk drive to the back of the C64-LINK cartridge. You could also use a 1541 (serial) drive with a parallel printer, or a Commodore tape recorder, a 1541 (serial) drive, and a parallel printer. Mix and match these peripherals to suit your requirements and your budget.
3. VL-4 - '64' User's Port to Modem: This cable connects the '64' user's port to an RS-232 modem

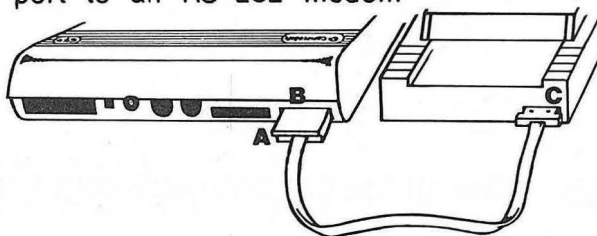


FIGURE3 64 User's Port to Parallel Printer

Legend: A - VL-3 adapter
 B - 64 User's Port
 C - Parallel printer

Recommended cables
and adapters for various
printers and disk drives.

CONNECTIONS	FOR EXAMPLE (64 plus ...)	CABLES REQUIRED
All Serial (or tape + serial)	1541 drive +VIC Graphics Printer	no extra cables
All IEEE	Commodore 4040 drive + Commodore 4022 printer	PET TO IEEE + IEEE TO IEEE
IEEE + Serial	1541 drive + Commodore 4022 printer	PET TO IEEE
Serial + Parallel	1541 drive + Epson MX80 printer	VL-3
IEEE + Parallel	Commodore 4040 drive + NEC Spinwriter 3530	PET TO IEEE + VL-3
Serial+ Parallel + IEEE	1541 drive + Epson MX80 printer + IEEE Voice Synthesizer	PET TO IEEE + VL-3
tape + parallel	tape + Epson MX80 printer	VL-3
tape + IEEE	tape + Commodore 4022 printer	PET TO IEEE
64 to RS-232 modem	Novation Cat Modem	VL-4

Chapter II

GETTING THE MOST OUT OF THE C64-LINK

1. This Guide and Programming Manuals

The objective of this guide is to introduce you to some of the advantages of using C64-LINK with your 64. If you require a manual that teaches programming, we recommend that you use this guide with a guide to programming a PET. Even expert programmers will use standard reference books.

You do not need the programming manuals to begin using C64-LINK. **C64-LINK is at your command as soon as you connect your 64 to your printer and/or disk drive.** You will be able to use the enhanced commands from C64-LINK in writing your first 64 programs. Read this manual through once to get an overview of the capabilities of C64-LINK.

if you are new to computers, or unfamiliar with the 64, we recommend that you read all or part of the manual that is shipped with the 64 computer. Those who plan to use the machine language monitor (more on what that is shortly) should acquire the 64 Programmer's Reference Guide.

A list of some useful programming manuals follows. References to these recommended manuals appear in abbreviated form throughout this guide. The manuals are referred to with a letter code (64, B4, PET, DISK, or RCW) and page numbers show where you may can find more detailed explanations of particular commands.

C64 and BASIC 4.0 MANUALS

Manual Code

'64'	Programmer's	Reference	Guide
1982. (Not released as of Nov 1982). Everything you need to know about '64' BASIC (BASIC 2.0). Techniques in programming with examples. Detailed introduction to machine language programming. Explanation of the special features of the 64.			

64

User's	Reference	Manual	Comm-
odore BASIC Version 4.0 Commodore Business Machines, 1980. (part number 321604). Commands and Statements for BASIC 4.0. Extended discussion of points covered in this guide. Some discussion of machine language programming.			

B4

PET/CBM	Personal	Computer	Guide	(Second
Edition). Adam Osborne & Carroll S. Donahue. Osborne/McGraw-Hill, 1980. Comprehensive programming guide for all Commodore computers released before the '64'. Useful subroutines illustrate BASIC 4.0 and BASIC 2.0 (64). A 3rd edition is in press with corrections and updates.				

PET

User's	Manual for	CBM 5 1/4-inch	Dual
Floppy Disk Drives. Commodore Business Machines, 1980. (part number 320899). Guide to the use of BASIC 4.0 with the CBM disk operating system. This manual will complement the 1540 User's Manual which does not cover BASIC 4.0.			

DISK

Programming	The	PET/CBM	The
Reference Encyclopedia For Commodore			
PET & CBM Users Raeto Colin West, Greensboro Computer! Books. An advanced programmers guide that covers all versions of PET BASIC and machine language.			

RCW

2. C64-LINK and the 64 RAM

Your 64 has 2 different types of memory: ROM, or 'read only memory', and RAM, or 'random access memory'. The 64's ROM contains all of its operating instructions, including 64 BASIC, a language that assists you in giving 'English-like' instructions to the 64. Programs are usually entered into the RAM of the 64 and must be re-loaded every time you require their use. You can enter a program line by line, or recall a saved program from a cassette tape, a floppy disk, or cartridge. All programs that are written in BASIC are interpreted by the 64's 6510 machine language processor. The C64-LINK monitor, which is introduced later in this guide enables you to examine and modify machine language programs in the 64 memory.

3. Relocating C64-LINK - Run More Programs!

When C64-LINK is installed, 8K of RAM is not immediately available for BASIC. This is because C64-LINK resides in memory location \$8000 to \$9FFF which normally contains RAM. There are three ways to recover this memory and reduce possible memory conflicts with some programs and utilities.

1. You may turn off C64-LINK to recover the 8K RAM. To do this, you must enter the following commands exactly as they are printed. Once this is done you cannot access any C64-LINK command (BASIC 4.0, IEEE, Monitor):
SYS 64789:SYS 58451:POKE 57090,253: SYS 64863: POKE 55,PEEK(193): POKE 56,PEEK(194): CLR.

2. Richvale Telecommunications provides two supplementary relocater programs that permit the use of all 38911 bytes of RAM accessible to BASIC, after C64-LINK is loaded. In technical terms, the first program, **C64-LINK/\$C000**, moves the C64-LINK to memory locations \$C000 to \$CFFF and frees the 8K RAM from \$8000 - \$9FFF.
3. The second program, **C64-LINK/NO RAM**, changes BASIC so that it resides in RAM rather than ROM, without changing the location of BASIC in memory. Secondly, this program replaces the SERIAL input/output routines in the BASIC ROMs with the equivalent IEEE routines. Please note that though this program enables the user to access IEEE devices, it does not provide access to BASIC 4.0 and the monitor. Nevertheless this is a valuable feature when users require the use of RAM at \$8000 to \$9FFF and \$C000 to \$CFFF, as well as the use of IEEE devices. For example, the Commodore demo program for the 64, featuring Clyde the sprite, will not run with C64-LINK at \$8000 or \$C000 but it will run after running **C64-LINK/NO RAM**.

4. BASIC 4.0 and C64-LINK

BASIC 4.0 is a considerable improvement over BASIC 2.0 (64 BASIC). It simplifies the use of disk drives and speeds up the time required to write and edit programs.

These are the BASIC 4.0 commands that you can now use with the 64. All of BASIC 4.0 commands are defined in the next section of this guide. You can use these commands in direct mode (type them in and press RETURN), or they can be incorporated into your programs. As with other '64' commands they can also be abbreviated.

BASIC 4.0 Commands available with

C64-LINK



5. Input/Output (I/O) Commands

An I/O command controls the flow of data in and out of the 64 memory. The C64-LINK offers three different I/O commands to control of external devices such as printers or disk drives. Typing in these commands, IEEE, PARALLEL, or SERIAL, permits the operation of virtually any peripheral equipment available for a PET/CBM computer.

When the 64 is turned on the computer defaults to IEEE, allowing access to the Commodore IEEE disk drives and printers. If you turn on your 64 and hold down the C = key, the computer defaults to SERIAL. Once the 64 is turned on, IEEE and SERIAL may be accessed by entering IEEE or SERIAL followed by RETURN.

In using BASIC 4.0 commands, you will frequently need to specify what device you wish to use. This is done by specifying a device number. For example, the printer is usually device number 4 and the disk drive is usually device number 8. While using C64-LINK any references to a device number greater than 3 will be directed to either SERIAL or IEEE devices as previously selected.

To select a parallel printer, enter PARALLEL and press RETURN. When using the parallel option, any reference to device number 4 will be directed to the parallel printer. All references to a device number greater than 4 will be directed to the IEEE or SERIAL devices.

NOTE You must select IEEE or SERIAL before selecting PARALLEL.

See chapter I of this guide for a list of cables that you will need to connect various peripherals.

Chapter III

BASIC 4.0 COMANDS

III BASIC 4.0 COMMANDS

The syntax and use of the BASIC 4.0 commands follow. For a more in detailed description you may consult the Commodore manuals.

D drive
dn drive number
U unit (e.g. disk drive as U9
 instead of the default of U8)
dev device (# number)

0 - Keyboard	5 - modem
1 - Cassette #1	6-7 - assigned
2 - Cassette #2	by user
3 - Screen	8 - disk drive
4 - printer	9-15 - assigned
	by user

APPEND

B4:17

PET :362

APPEND reopens a closed sequential file for the purpose of expanding the file by writing information to the end of the file.

(see: file, sequential file)

Syntax: APPEND#lfn,"file name"(.D dn)(ONU dev)

Example: APPEND#2,"FILE",D1 ON U9

BACKUP

B4 :18

PET :362

RCW :216

BACKUP creates an exact duplicate of a disk on IEEE disk systems.

Syntax: BACKUP D source TO D destination

Example: BACKUP D0 TO D1

COLLECT **B4 :22** **PET:364**

COLLECT is a useful disk maintenance command that can provide a quick remedy to temporary disk problems by rewriting a disk's "Block Allocation Map" (BAM) to exclude sectors in files that have not been closed properly.

Syntax: COLLECT (D dn) (ONU dev)

Example: COLLECT D0

CONCAT **B4 :23** **PET :364**

CONCAT concatenates two files so that the resulting single file contains all the data from the original files.

Syntax: CONCAT D dn1,"file name 1" TO D dn2,"file name 2" (ONU dev)

Example: CONCAT D0,"FILE1" TO D1,"FILE"

COPY **B4 :25** **PET :365**
DISK :29-31 **RCW :222**

COPY permits the selective copying of any files from one diskette to another, or on the same diskette where the copied file must have a new name. COPY will not work with relative files which can be copied with newer versions of the public domain program COPY ALL. (BASIC 4.0 - see **DISK** and **RCW** for wider applications of the COPY command.)

Syntax: COPY D dn1,"file name1" TO D dn2,"file name 2" (ON U dev)

Examples: COPY D0, "TEXT" TO D1, "TEXT1"

COPY D0, "TEXT" TO D0, "TEXT 1"

DCLOSE **B4 :27** **PET :366**

DCLOSE will close either the file specified after the command, or if no file is specified, it will close all files that are currently open on the disk drive.

Syntax: DCLOSE#Ifn(ON U dev)

Example: DCLOSE#2

To close all files: DCLOSE

DIRECTORY (or CATALOG) **DISK :26-27** **PET :367-68**

B4 :30 **RCW: 217-218**

DIRECTORY or CATALOG displays the contents of a disk to the screen or printer. If ID1n is not specified, the '64' will list a directory of both drives. There is a pattern matching feature with the CATALOG command that is only available with C64-LINK.

Syntax: DIRECTORY (D Dn) (ON U dev)

Examples: DIRECTORY directory for all drives, device 8

DIRECTORY D1 ON U9 directory for drive 1, device 9

CATALOG "64*", D0 *displays all file names that have the first 2 letters "64".

DLOAD **B4 :31** **PET :368**

DISK :36,44

DLOAD loads a program from disk. If no drive number is specified, the command defaults to drive 0.

If you hold down shift and press the RUN/STOP key, 64 with C64-LINK will load and then run the first program on the disk.

Syntax: DLOAD "file name"(,D dn)(ON U dev)

Example: DLOAD "PROGRAM",D1

DOPEN

B4 :32

PET :369

DISK :39 RCW :225-226

DOPEN is used to open a file to the disk. Any file type may be opened for read but only sequential and relative files may be opened for write.

Syntax: DOPEN#lfn,"file name"(.D dn)(.L record length)(.W)(ONU dev)

Example: DOPEN#2,"FILE",D1,L25 opens a relative file with record length 25

DOPEN#2,"FILE",D1,W opens a sequential file for writing

DOPEN#2,"@FILE",D1,W opens an existing sequential file for writing

DOPEN#2,"FILE" opens any file_type for reading

DS\$ & DS

DISK :81-85 PET :421-427

B4 :74-75. B1-B8

The variables DS\$ and DS are used to check the disk status. DS\$ is a message (a string) that explains a disk error. (This is equivalent to reading secondary address 15 when an error occurs).

DS is a numeric variable that contains only the disk error number.

Syntax: Used as regular variables from BASIC

Example: PRINT DS\$

DSAVE

DISK :36 RCW :229

B4 :33

DSAVE is equivalent to the SAVE command except that it works to disk.

Syntax: DSAVE"file name"(.D dn)(ONU dev)

Example: DSAVE"FILE",D1 saves "FILE" to drive 1

DSAVE"@FILE",D1 saves over an existing file

HEADER	B4 :41	PET :373
	DISK :25t	RCW :230

HEADER formats a blank disk so that it can be used with the disk drive. For a discussion of the shorter form of HEADER, a few seconds as opposed to several minutes see RCW.

Syntax: HEADER"disk name"(.D dn)(.I ld)(ONU dev)

Example: HEADER"NEW DISK",D1,I01 will format disk and clear the directory

HEADER"GAMES 64 #1",D1 will clear the directory

RECORD	B4 :55	PET :388
	DISK :43	RCW :232

RECORD positions the disk to a specific record or byte when using relative files. The record itself is an entry that the user has stored in a file.

Syntax: RECORD#lfn,record number (byte number)

Examples: RECORD#2,200 positions file 2 to record 200

RECORD#2,200,20 positions file 2 to the 20th position in record 200

RECORD#2,(J) positions file 2 to record J.

Note that brackets are necessary when using a variable.

RENAME	B4 :57	PET :389
	DISK :32	RCW :233

RENAME changes the name of a disk file (including programs).

Syntax: RENAME(D dn) "file name" TO "new file name" (ONU dev)

Example: RENAME D1, "OLD NAME" TO "NEW NAME"

SCRATCH **B4 : 61 PET :392**
 DISK :32-33 RCW :234
SCRATCH deletes a file from the disk.

Syntax: **SCRATCH**"file name"(.D dn)(ONU dev)

Example: **SCRATCH**"NEW NAME",D1

The following on files is included for your information.

It is not a BASIC 4.0 Command.

FILE

B4 :Appendix I RCW :162-177 Disk: Chapter 6
64-1540 USERS Manual: 49-62.

A file is a set of records which are arranged in a logical manner and given a name for ease of handling.

When a file is opened, the 64 must be instructed to read records from that file or to write records to the file. A C64-LINK user who is unfamiliar with PET file-keeping should consult the manuals listed above. It is not possible in this short guide to do justice to such an important topic.

Sequential files: This is the least complicated form of file-keeping, but it is slow and impractical when dealing with large numbers of records. The records are stored one after the other on disk or on tape, and they may be of variable length.

Relative files: (random access files) Records are all of the same length and can be recalled, by number, without reading through the entire file sequentially.

Chapter IV

THE C64-LINK MONITOR

The machine language monitor (MLM) displays the 64's memory. Data that you enter into the 64 memory is readable on the MLM screen in hexadecimal (HEX) code. These are numbers with a base of 16, rather than the usual base of ten (decimal).

The monitor is used to display, alter, execute, load and save memory within the 64.

To enter the monitor, type **MONITOR** and press **RETURN**.

When in the monitor there are a set of six single letter commands available to the user. These are:

- M display memory
- R display registers
- G execute machine language code
- L load a file into memory
- S save memory
- X return to basic

Display memory

Enter: M XXXX YYYY

~~XXXX~~ here stands for the beginning address to display and YYYY stands for the end address. To alter this memory type the new data over the old data on the screen. Press **RETURN**.

Display registers

Enter: R

and the registers will be displayed on the screen.
To alter the registers type over the values and press RETURN.

Execute code

Enter: G XXXX

where XXXX is the beginning location of the machine language code.

Load

Enter: L "file name",device

Example: L "FILE",08

This will load the file from device 08 (disk drive)

Save

Enter: S "file name",device,start,end

Example: S "FILE",01,1201,12D0

This will save the specified memory (from location 1201 (hex) to location 12D0 (hex) and store it on device 1 (cassette recorder)

Return to BASIC

Enter: X

Chapter V

MODEM

The modem software allows the 64 to operate as a terminal for a mainframe, talk to bulletin boards or talk to other computers equipped with a modem. Any standard RS232 modem connected to the 64 user's port with the VL-4 cable (see Chapter I) or the VICMODEM will work with the modem software supplied within the C64-LINK.

Here are the steps to follow before using your MODEM:

1. Open a file that tells the 64 what the computer at the other end of the line will expect.

Syntax: OPEN2,2,0,CHR\$(control register)+chr\$(command register)

Examples: OPEN 2,2,0,CHR\$(6) + CHR\$(0) (standard for most uses)

OPEN 2,2,0,CHR\$(6) + CHR\$(2) (useful where host computer does not echo data back e.g. two 64s with C64-LINK)

2. Press RETURN.

3. Enter MODEM.

4. Press RETURN. The cursor will disappear. Whenever you press a key the text that you type is sent out through the modem and whatever comes over the modem will be displayed on the screen. The 64 may need to be set to upper/lower case by holding SHIFT and pressing the Commodore key. All data is sent and received as true ASCII (as opposed to 64 ASCII).

5. To initiate communication over the modem, first dial the number of the other computer or the bulletin board. When you get a carrier signal from that number (a high pitched squeal), put your modem into its data receive mode. Press RETURN several times.
6. At this point you should get a log on message from the other computer displayed on the 64 screen.

Commands and Control characters

Control Register The values for the control register tell the 64 the baud rate, word length and number of stop bits. If you are using 300 baud, it is typical that the control register is set to 6 and the command register is set to 0 (or 2 if the host computer is not echoplexed).

Command register : The values for the command register tell the 64 how to handshake, whether the data is echoplexed, whether full or half duplex is used and what are the parity options. The following charts tell how to select the various options.

Control Characters Control characters may be sent by holding the CTRL key and then pressing the desired character.

Escape If you require an escape character, press CTRL and "[".

Break If you require a break key, CTRL and "@" will send a "hardware break" (ASCII 0).

Quit To quit the modem program, press RUN/STOP and RESTORE. This will return control to BASIC 4.0.

Chapter VI

C64-CHAIN

You may hook up eight or more 64's equipped with C64-LINK and the C64-CHAIN feature permits all of these computers to access the same disk drive and printer. This 'networking' feature provides possibilities for educational and business time-sharing. Best of all, it is a feature included at no extra cost.

To set up a C64-CHAIN, connect your computers together with IEEE to IEEE cables. One of the computers should be connected to a disk drive or similar storage device. There are several minor precautions to observe in using the C64-CHAIN.

1. Computer users can only catalog a disk on an individual one at a time basis.
2. If more than one person is reading or writing files, then each person in the group must use a different secondary address for their respective file. The DOPEN command selects its own secondary address. For this reason, you must there use the BASIC2.0 DOPEN command to ensure that unique secondary addresses are selected.
3. (The following point is quite technical and most users can ignore this information.) The IEEE bus contains a line called SRQ which is unused by Commodore disks and printers but it is used by the

Commodore IEEE modem. The C64-CHAIN uses this line to check if the bus is free. This interferes with the SRQ used in the Commodore 8010 IEEE modem. To solve this problem cut the SRQ line on the back of the C64-LINK (pin 10). After this is done, you will not be able to use the C64-CHAIN feature.

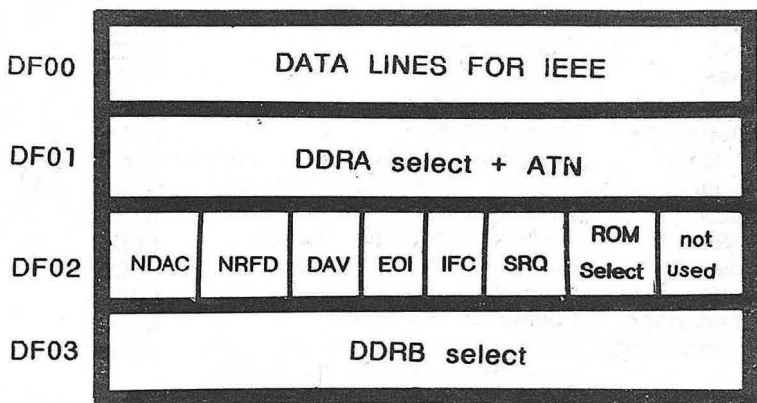
Chapter VII

C64-MEMORY USE

Location (Hex)	Use	Section of C64-LINK
* 0002	Processor Status	(MONITOR)
* 0003	Accumulator	(MONITOR)
* 0004	X-reg	(MONITOR)
* 0005	Y-reg	(MONITOR)
* 0006	Stack pointer	(MONITOR)
000B	Used in tokenizing	(BASIC 4.0)
* 0019-001A	Program Counter	(MONITOR)
* 001B	Convert hex number	(MONITOR)
* 001C	Input hex number	(MONITOR)
* 001D		(MONITOR)
* 0062-0063	Line number for catalog	(BASIC 4.0)
0071	Used in tokenizing	(BASIC 4.0)
0090	I/O Status	(IEEE)
0093	Load/verify flag	(IEEE)
0094	Deferred character flag	(IEEE)
0095	Deferred character	(IEEE)
0097	Used in tokenizing	(BASIC 4.0)
0098	Number of open files	(IEEE)
0099	Input device	(IEEE)
009A	Output device	(IEEE)
00AC-00AD	Save pointer	(IEEE)
00AE-00AF	Load pointer	(IEEE)
* 00AE	Device# for hardcopy of catalog	(BASIC 4.0)
* 00AF	LFN for hardcopy of catalog	(BASIC 4.0)
00B7	# of characters in file name	(IEEE)
00B8	Current logical file number	(IEEE)
00B9	Current secondary address	(IEEE)
00BA	Current device number	(IEEE)
00BB-00BC	Pointer to file name	(IEEE)
* 00C1-00C4	Used in parsing 4.0 command	(BASIC 4.0)
	Input hex numbers (MONITOR)	
00C3-00C4	Relocate location for LOAD	(IEEE)
* 0334	I/O type	(IEEE)
	2= Serial	
	3= IEEE	
	6= Serial+Parallel	
	7= IEEE+Parallel	

* 0335	Check DS,DS\$ flag	(IEEE)
* 0336-0337	Monitor Link	(MONITOR)
* 033A-0352	BASIC 4.0 parsing flags	(BASIC 4.0)
* 0353-	BASIC 4.0 command area	(BASIC 4.0)
	DS\$ input area (BASIC 4.0)	
* 8000-8FFF	C64-LINK ROM	
* 9000-9FFF	Image of C64-LINK	
* DC00-	Timer used for timeouts	(IEEE)
* DD00-	Used for parallel	(IEEE)
* DF00-	Used for IEEE	(IEEE)

* Indicates that C64-LINK uses this location for purposes other than those originally assigned by Commodore.



Notes

- 1) SRQ is used for deciding when disk is being used.
- 2) IFC is always held high.
- 3) Setting ROM Select low disables ROM in \$8000-\$9FFF area.

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